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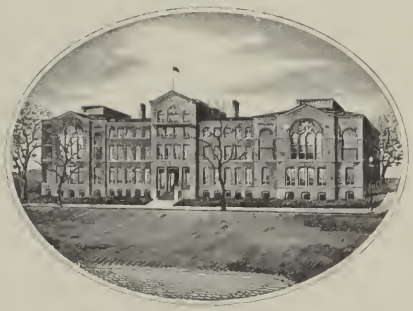

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U. S. Department of Health, Education, and Welfare

Public Health Service

CATECHISM,

PHYSICO-MEDICUM:

BEING AN

EPITOME

OF THE THEORY AND PRACTICE OF

PHYSIC;

AGREEABLE TO THE BEST AUTHORS BOTH ANTIENT AND MODERN.

TO WHICH IS ADDED,

Some practical RULES and OBSERVATIONS, and a DISCOURSE, on the Nature, and Operation of MERCURY, as a MEDICINE.

By a STUDENT in PHYSIC,

IN *CONNECTICUT.*

Ars quælibet florito.

HARTFORD:

Printed by WATSON AND GOODWIN.

PREFACE.

THIS short compendium of physick, wherein the art, both of theory, and practice, is epitomised, in a method so concise, and familiar, will no doubt be very acceptable to every true physician; but especially beneficial to students, and young practitioners, and that chiefly by helping their memories, as it is in some measure a recapitulation of the great things belonging to the theory, and practice of physick: being (as to sentiment) mostly a collection from the best authors, both ancient and modern. The discourse on mercury, though not collected in any sense, is notwithstanding formed on principles of sound philosophy, is therefore capable of demonstration, and agreeable to the sentiments of the best authors, is therefore a proper foundation for much improvement, by the ingenious, and as the subject is very important (mercury being the most soverignly powerful, yet dangerous medicine) so it is likely to be of great service to mankind. But alas, how few true physicians! how few theoretick practitioners in the midst of so many advantages! so many noble, theoretick, and practical authors, in fair English, Boerhaave, Huxham, Hallar, *and many more, (too many here to name,) all well known, with which we are of late so happily favored. Surely those that practise in ignorance are without excuse, when the means of knowledge are so handy, and so plenty. Are the lives of mankind of little worth, that every ignorant* pretender *must needs handle them? And yet how engaged?*

ged? How earneſt they are? And how many arts they uſe to gain their reputation as phyſicians? How do they take the advantage of every common prejudice? and uſe every inſinuation, to gain repute? How do they cry down Mercury, and Jeſuit's Bark? yea, and every thing elſe of importance, in phyſic, that they may be accounted ſafe, although their patients lives, and healths are at ſtake, for the want of them, and as they know not how to uſe; but condemn them; ſo perhaps, if a man of ſkill ſhould adviſe them, they may not be admitted. How many men of popularity learning, and ſenſe act the mean part, to cry down theory? and becauſe they do not underſtand it, they would repreſent phyſic as a kind of chance work, and its technical terms, as an heap of jargon; as if there could be no ſenſe, or reaſon in thoſe things, they have never learned. How much damage is done to the true cauſe of phyſic, by men of learning in other matters, who take up the practice of phyſic on quack principles, and even write againſt theory: theſe being (a little more as it were) refined, and ſplendid quacks, are more bold and daring in their practice, and uſe medicines of the greateſt importance, at all adventures, and ſo bring them into diſgrace, and more ſtrongly prejudice the populace againſt them, by their unſkilful, and abuſive uſe of them. How much harm comes even by receipts? although very ſkilfully compoſed to ſuit ſome particular caſes, which falling into the hands of quacks, of every denomination, ſometimes enable them (by chance) to make cures, tho' they know not how, nor why: for by this means, they get the name of phyſicians, though deſtitute of every real qualification to make them ſuch, and having a name, they may now rob men of their lives, healths, and eſtates with impunity: for though by their receipts, they may (by chance) effect cures, in ſome inſtances; yet in ſeemingly the like caſes

caſe, there may be many different circumſtances, not diſcernable, but by true phyſicians, and ſo their medicines, ſo much depended on, prove inſufficient, yea even deſtructive; but theſe falſe pretenders, having done the beſt they can, do not feel themſelves to blame, however ignorant they may be, of the cauſes of diſeaſes---the nature of medicines, or the conſtitutions, and circumſtances of their patients. How regardleſs are men of ſenſe of this important controverſy? How little are true phyſicians regarded? How little encouraged? How regardleſs are our legiſlators of this controverſy, important as the lives, and healths of mankind are? How careful are they to regulate almoſt all ſmaller matters? And muſt this ſtand by till proviſions are made for every thing elſe, and even then be totally neglected? It is of great neceſſity therefore to call upon the rational the candid, the judicious, and public-ſpirited part of mankind, and eſpecially on our legiſlative authority, to concert meaſures, to regulate this very important affair: Difficult as it may be, the importance of it may apologize, yea, even counterbalance, and much over-balance the trouble, that any legiſlative body could take in forming a regulation of phyſicians: For what (in this world) is of more worth than life, and health, which are at ſtake? or what good can the enjoyments of life do us, while languiſhing on a ſick bed? or groaning in extreme pain? There is no need of ſo many hazards in practice; there is not ſo much uncertainty, in the operation of medicines, as is repreſented, by ſome (perhaps only as a cloak for their ignorance,) for the theory, and practice of phyſic are as rational, as the mathematicks, only let them be underſtood. The theory being underſtood, lays the only foundation, for a rational practice, as has been long ſince demonſtrated, by Dr. Boerhaave. Now, from theſe, and ſuch like conſiderations,

ons, an apology for publication may eaſily ariſe in the readers mind, if any ſhould be thought neceſſary.

In fine, that this ſhort tract on theory and practice, contained in the following pages, may ſerve to recommend theory, and aſſiſt towards a rational, theoretick, and ſafe practice, is the ſincere wiſh of the public's

Humble Servant,

J. MINOR

Norfolk, March 17, 1778.

CATECHISM,

Catechism, Physico-Medicum, &c.

The INTRODUCTION.

1 Question. WHAT is Physic?

Answer. The knowledge of all natural bodies, with their mutual dependencies; but in a more limited sense 'tis applied to the science of medicine.

2. Q. What are the objects of Physic?

A. All natural bodies; but in a medicinal sense, the animal œconomy * or life, health, disease, and death: "Life as to its continuance, health as to its "preservation, disease as to its prevention, and re- "moval, death as to prognosticating its approach, "and keeping it off till the machine is worn out."

3. Q. How is Physic divided?

A. Into

* As the whole of philosophy is comprehended in the knowledge of all natural bodies with their mutual dependencies: so 'tis the sum of all medicinal knowledge, rightly to understand the various parts of the animal œconomy with their mutual dependencies: for he who does so can certainly readily discern even the least disorder therein and also by what mediums, or ways they may be rectified. Thus the science of medicine is an epitome of philosophy in general, from which it borroweth many helps, and illustrations.

A. Into five parts, viz "Phyſiology, "Semeiotica, Prophylaxis, and Therapeutica."

PART FIRST.

4. Q. What is Phyſiology?

A. The animal œconomy, or the knowledge of the natural conſtitution, of the human body, in its healthy ſtate.

5. Q. Of what is the animal œconomy compoſed?

A. Of ſolids and fluids.

6. Q. What are the animal ſolids?

A. They are the rudimental ſtamina, of our bodies, or fibres, of various magnitude, ſhape, and direction: which are formed by nature, into nerves, bones, cartilages, ligaments, membranes, muſcles, veſſels, and viſcera: theſe are the ſolids, and contain the fluids.

7. Q. How are the animal ſolids ſyſtematically divided?

A. Into ſix ſyſtems, viz. the nervous, arterial, veinous, muſcular, oſſi e, and viſceral ſyſtems.

8. Q. What are theſe ſyſtems of the animal ſolids?

A. The nervous ſyſtem is the brain, and all its productions, conveying the various ſenſations to every part of the body; as ſeeing to the eyes, hearing to the ears, ſmelling to the noſe, taſting to the tongue, feeling to the external, and internal parts of the body, and motion to the muſcles.

A. 2. The arterial ſyſtem containeth all thoſe conical, converging, blood veſſels: that receive the blood

blood from the heart (and by their ſyſtolic, and diaſtolic motions) carrieth it to every part of the body: for its nutrition, growth, and the various purpoſes of ſecretion, excretion, life, and health.

A. 3 The veinous ſyſtem containeth all thoſe diverging blood veſſels (without ſyſtole, or diaſtole) that collect the blood, from the various correſponding branches, of all the arteries, and return it to the vena-cava, and heart.

A. 4 The muſcular ſyſtem containeth all thoſe fibrous, fleſhy, or tendonous portions, that are variouſly faſtened to the bones: for their ſtability, and the purpoſes of motion.

A. 5. The oſſine ſyſtem containeth all thoſe cloſely connected fibrous ſubſtances, that are hard, and inflexible, which we call bones; ſerving to keep the body in ſhape, to defend the internal parts, and to aſſiſt the muſcles to perform diſtinct actions in motion.

A. 6. The viſceral ſyſtem containeth all thoſe parts to which nature has aſſigned ſome particular uſe; either for the whole body chiefly or for one another particularly; and the whole body ultimately; for the purpoſes of digeſtion, and chylification: the heart to receive, and propel the blood: the lungs to receive all the blood, from the right ventricle of the heart, as it returns from the various parts of the body, together with the new chyle, and by the help of reſpiration to refit the blood; for the various purpoſes of nutrition, accretion, and ſecretion: the liver to ſecern bile; for the purpoſes of chylification: the ſpleen to prepare blood, for the liver: the kidneys to be a ſink to the whole body to waſh out of the

blood thoſe particles that are worn out, and become unfit for nutrition, together with thoſe particles of the ſolids that are abraded, by the power of circulation, and the unprofitable ſalts and oils: the teſticles to ſecern ſemen; for procreation, that our ſpecies may be propagated; alſo to this ſyſtem belongs all the glands.

9. Q. How are the dependencies, of the ſeveral ſyſtems, of the ſolids mutually performed?

A. The brain, being the radix, the medulla oblongata, and ſpinalis the ſtock, and the forty pair of nerves the branches; the nervous ſyſtem is therefore the moſt fundamental of all: more eſpecially, as by the expanſion of the nerves are formed bones, cartilages, ligaments, membranes, muſcles, veſſels, and viſcera, and of conſequence all the ſyſtems of the body; yet the viſceral ſyſtem ſupplies the veinous; the veinous ſupplies the arterial; the arterial ſupplies the nervous; the arterial and nervous ſupply the arterial, veinous, muſcular, oſſine, and viſceral ſyſtems.

10. Q. What are the animal fluids?

A. The blood, lymph, and ſerum, yea, all that is ſecerned from it; ſuch as perſpiration, ſweat, urine, ſaliva, ſucus gaſtricus, pancreatick juice, bile, mucus, ſemen, ſebax, cerumen, and the like.

11. Q. How is the circulation of the blood performed?

A. By the action of the heart, and arteries: thus the right auricle of the heart, which is in its ſyſtole, when the right ventricle is in its diaſtole and the reverſe, receives the blood from the vena-cava; and by a mechaniſm, by which it cannot return into the vena-cava,

vena cava, upon the contraction of the auricle the blood is forced into the ventricle; and by a mechaniſm, by which it cannot return into the vena cava, upon the contraction of the auricle the blood is forced into the ventricle; and by a mechaniſm, by which it cannot return into the auricle, upon the contraction of the ventricle, the blood is ſent into the pulmonary artery; to ſuffer the action of the air, in the various extream brauches of the pulmonary artery, ſpread upon the many veſicles of the lungs; from whence it is collected, by the various correſponding branches of the pulmonary vein, and returned to the left auricle, and ventricle of the heart: where by a like mechaniſm, it is received, and ſent into the great artery, from thence into all the arteries of the body, to be ſecerned by all the glands, fitted for ſecretion: from whence it is collected, by the various correſponding branches of all the veins; and the remaining blood returned to the vana-cava, as before.

SECOND PART.

12. Q. What is Pathology?

A. The knowledge of the diſeaſes incident to the animal œconomy; and comprehends their differences, cauſes, and effects.

13. Q. What are the differences of diſeaſes?

A. They differ, as to diſeaſes of the ſolids, and diſeaſes of the fluids.

A. 2. As to cauſe they are divided into "Idio-"pathic, ſympathic, hereditary, connate, or ac-"quired."

A.

A. 3. As to ſubject they are divided into thoſe of children, young people, adults, and old folks.

A. 4. As to time they are divided into moſt acute of four days, per-acute of ſeven days, acute of twenty days, and all the reſt are chronical.

A. 5 They are divided as to ſeaſon into vernal, autumnal, continual, intermitting, and remitting.

A. 6. As to ſtage they are divided into the beginning, increaſe, ſtate, declination, and end.

14. Q. What are the cauſes of diſeaſes?

A. Theſe are very many, and ſometimes very complicate; which to find out the ableſt phyſician need uſe all his ſagacity; but in general, all errors in the non-naturals, all ſolutions of continuity, and whatever diſturbeth the even motion, of the circulating fluids, either by obſtructing, contaminating, conſtringing, or relaxing; rendering the fluids too thick, or too thin; and the ſolids too much braced; or relaxed; ſuch as *plethora*, *lentor*, *rareſcence*, and all ſorts of *acrimony*.

15. Q. What are the effects of diſeaſes?

A. They terminate, "in health, another diſeaſes, or death.

THIRD PART.

16. Q. What is ſemiiotica?

A. General ſigns of health, and diſeaſes; which ariſe from two ſources, viz. the animal œconomy, and obſervation.

FOURTH PART.

17. Q. What is prophylaxis?

A. The preservation of health, and "prevention "of diseases: having three rewards to crown it viz. "the preservation of health, when present; the pre- "vention of diseases; and the protracting life, to a good "old age."

FIFTH PART.

18. Q. What is Thera putica.

A. The curative part of physic: and is co-equal with methodus medandi, or indication, * which is vital, preservative curative, and palliative.

19 Q.

* Peculiar difficulties many times arise in practice from the compound nature of diseases, which create such a multitude of different symptoms and contrary indications, as to put the best physician very much to the puzzle. In this dilemma it would be well, if every practitioner, had present in his mind the following short; but comprehensive rules abridged from Dr. Boerhaaves lectures.

1. Whatever in our patient is according to nature requireth preservation; but that which is contrary demands a removal.

2. The cause curing diseases, by remedies being the remaining vis-vitæ: therefore the vital indication must be regarded before others tho' equally urgent.

3. When two unequal indications urge together; the greatest must be most regarded.

4. Nature rejoiceth in those things to which she has been accustomed; but is commonly disordered and uneasy under things unusual.

5. In the greatest maledies the most powerful remedies and without delay; but in more slight disorders the milder remedies, and with deliberation.

6. Contrarys are removed, by their opositeS.

7. The inventia and ledentia are like, in what they indicate.

19. Q. What anſwereth the vital indication?

A. Cordials: or that which may act as cordials; which in caſe of plethora are evacuants. †

20. Q. What anſwereth the preſervative indication?

A. The taking away the cauſe of the diſeaſe.

21. Q. What anſwereth the curative indication?

A. The taking away the diſeaſe itſelf: which is always to be attended, by evacuating the plethoric, attenuating the vicid, obtunding the acrid, opening the obſtructed, relaxing the contracted, coroborating

† For evacuations give free play to the oſcillatations of the veſſels, that were ſo over diſtended, that they had almoſt loſt their tone, which over diſtenſion is the cauſe of the weakneſs, or faintneſs. Now ſhould we in the midſt of this plethora (all evacuations being neglected) give hot ſtimulating cordials they might rouſe the circulation indeed, as it were in the laſt extremity. And now according to the ſtate of the ſolids and fluids different effects would follow. To make the beſt on it, and not to ſpeak of the different kinds of putrafaction and conſequent deſolation of the blood that might be the effects of the various ſorts of acrimony, that may have prepoſſeſed the blood; but even tho' the blood was balſamic enough: yet, the moſt terrible lentor, muſt be the conſequence of the blood, being ſo ſtagnated and preſſed, by the veſſels; and ſo ſudenly, and violently circulated, and heated. Now opium tho' a very good cardine in a languor of an oppoſite kind viz. where inanition is the cauſe would in the above caſe, produce worſe effects; than the hot ſtimulants, becauſe it greatly rarefyeth the the blood; and to rarefy where a plethora prevaileth is abſurd, and dangerous: hence neither ſtimulating cordials, nor opiates are either ſafe, or beneficial, in plethorick cases: hence alſo a caution neceſſarily ariſeth viz. never to give opiates, to abate even violent pains, where a plethora does exiſt; leaſt fatal effects ſhould follow: ſuch I mean as apoplexy burſtings of the veſſels, hemorrhages, unconquerable lentors fatal ulcers &c. All which may be prevented, and the pains abated; without opiates, by evacuation; tho' opiates may be given ſafely enough and to great advantage, after the plethora is taken down.

ing the flaccid, moderating the too violent motion, and restoring the lost fluids.

22. Q. What answereth the palliative indication?

A. Mitigating the symptoms, of the disease: which always taketh away something of the disease itself.

N. B. *From hence to the end of this Catechism, are sundry more practical enquiries.*

23. Q. Now, what is health?

A. "An ability to perform well, all vital, natural, and animal functions: which is always "present, where there is a free, and regular circulation; just mixture and proportion of the blood, "and juices; and the due tone, and motion of all "the solids."

24. Q. What is disease?

A. "Any considerable alteration in the motion, "mixture, or quantity of the fluids: the too great "tension, or relaxation, and consequently accelerated, or languid motion of the solids: affecting the "whole body, or only some parts of it; joined "with a *perceivable* disorder of the secretions, excretions, vital, and animal functions: and terminating "in recovery, death, or the disordering some parts "of the body, when the disease terminateth in "another."

25. Q. What is a fever?

A. "An effort of nature to get rid of something "morbid, in the blood, in order to establish a better "health: which effort kindleth up a preternatural "heat; more, or less intense; of longer or shorter "duration, according to the peculiar nature of the "morbid matter; and the constitution of the patient, "who has it."

26. Q. What is the morbid matter in the blood actually cauſing a fever?

A. 'Tis either ſome or all theſe, viz. *plethora, lentor, acrimony, rareſcence*, or their various *combinations*; all other cauſes, being not alwa.s preſent in fevers; but pre-diſpoſing cauſes thereto. *

27. Q. How are fevers divided?

A. Into th ee general claſſes viz. inflamitory diſſolvant, and hectical.

What

* Thus all errors in the non naturals are but pre diſpoſing cauſes to a fever; for a fever once produced by them or any other cauſes muſt (ſuch is the nature of our blood) ſoon produce ſome or all the four cauſes above-mentioned; ſome or moſtly al of them being preſent in all fevers. But the important queſtion we have to illuſtrate is the morbid matters in the blood, which are the real cauſes of a fever; which being ſome, or all theſe, viz. plethora lentor acrimony, rareſcence; or their various combinations: Let us ſee how each of theſe produceth a fever ſeperately or one another reciprocally; and what difference in fevers their various predominancy or combinations make.

1ſt. Then plethora produceth a fever by diſtending the arteries beyond their proper tone; which cauſeth a greater re-action of the arteries upon the blood, conſequently a greater compreſſion, and agitation of the blood a greater attrition, and conſequent heat, and ſo produceth a fever; which being produced to a certain degree, is a never failing cauſe of lentor.

2d. Now lentor produceth a fever firſt by obſtructing ſo many of the capillaries that thoſe, that yet remain free have to tranſmit ſo much more blood in the ſame time; as to cauſe attrition, and the conſequent heat, as makes it a fever; and ſecondly, by inducing an acrimony into the blood, which it does by obſtructing the circulation in one part and cauſing too much motion, in the other: for (ſuch is the nature of the blood) that 'tis a free, and regular circulation, only that keeps it in a balſamic ſtate.

3d. Acrimony produceth a fever by ſtimulating the ſolids to a briſker motion: cauſing attrition, and conſequent heat, a certain degree of which (as we ſaid above) always produceth more or leſs of

28. Q. What is comprehended under each of these classes?

A. 1st The Inflamitory class comprehends, all those fevers, that take their rise chiefly from *plethora*, and a viciddense blood, called inflamitory; whether particular, or universal; from a simple ephemris, to the greatest degree of inflamation, as in a proper *causus*.

A. 2d. The disolvant class comprehends all those fevers, that arise chiefly, from acrimony: from the left degree of a flow, putrid fever; through all the horrid train of putrid, malignant, and pestilential fevers, to the *plague*, which is the head of them all.

C A.

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of a lentor: and how lentor, and acrimony produceth a fever, and one another, likewise has been shewed above: now heat and acrimony are the only two things that can produce rarescence in the blood so that in the absence of heat acrimony is the only producer of of rarescence.

But 4th. Rarescence, when produced, by either cause, becomes the cause of a fever, thus viz. by rendering the fluids more elastick, and increasing their bulk, which gives a greater spring to the solids; and so by increasing their vibrations increaseth, and procureth febrile heart.

5th. In fine, hence the great variety of differences there is in fevers, ariseth altogether from the predominancy of some of these, over one another, or their various combinations: Thus in disolvant or putrid fevers acrimony has the predominancy, which makes rarescence very urgent, because produced both by heat, and acrimony: therefore in this case, acrimony and rarescence are the chief causes to be regarded. But in ephemeretic or inflamitory fevers plethora, and lentor have the ascendency. Now there are many intermediate states wherein some one, or more of these, has more or less the ascendancy over the others: hence the great variety of fevers, however different in appearance, are yet produced and continued by the same causes.

N. B. I have dwelt the longer on this subject because of the importance of it, but yet must quit it too soon.

A. 3d. The hectical class comprehends all those habitual fevers, which tend directly to, and are always to be found in, all sorts of consumptions; whether arising from, the acrimony received into the blood, from pulmonary, or any other putrid ulcers; or from putrid acrimony any how mixed with the blood: or from a too thin, and elastic jet of vessels, and too lax a state of the excretory passages. †

29. Q. How are fevers in general cured?

A. By taking chief care to preserve life, and vital strength: by mending, and expelling the acrimony: by diluting, attenuating, concocting, and expelling the vicidity: and by mitigating the symptoms.*

† From these again variously compounded and mixed; being more, or less intense are to be found out, and distinguished, all manner of acute and chronical fevers.

* Febrile symptoms the most remarkable of which are the following, and to be mitigated, by some such method as this viz. coldness, and shaking, at the beginnings of fevers are to be mitigated; by nitrous acid or winy diluents drunk warm; but towards the end of the fever; by nutritives and mild astringents.

Thirst in fevers; by Spt. Nitr. Dulc. and water nitrated barly water, hydromel, and all acid, saponaceous and attenuating liquors, drank often.

Anguish in fevers: the nervous being caused chiefly by acrimony, is to be relieved by vomits' purges, diuretics diluents, emollients, and anodynes; but the inflamitory, as its cause is a spissitude of the blood; by bleeding, attenuants diluents coolers, fomentations and opiates.

Loathings and vomitings in fevers: that which is caused by a putrid bileous matter, is to be relieved by a gentle vomit, or a cooling purge, by acid diluents by acid austeer, and gently astringent stomachics

Or if by a flugish, vicid, and floting matter by diluting attenuating, purging, and vomiting. If by an immoderate motion of the nervous juice; by astringents, rest narcoticks, and cold water. But if a loathing, or vomiting ariseth from a slight inflammation

30 Q. How are fevers in particular diſtinguiſhed and cured?

nation of the ſtomach, and adjacent parts, it muſt be helped by bleeding and antephlogiſticks as in inflamitory fevers. Or if from the ſtomach, being convulſed impoſthumated, ſchirrous, cancerous; or by the like defects in the bowels, and parts adjacent; it may be known, and cured as them diſeaſes are, if curable at all.

Belchings and winds in fevers: thoſe that ariſe from contrary ſalts; may be relieved, by ballancing them: thoſe from putrifying humors by anteputrefcents; thoſe from vegetable ferments, by aromatic dilution: thoſe from nervous and hefteric ſpaſms; by nervous and antehefteric medicines and demulcents.

Weakneſs in fevers: that which ariſeth from lenter requireth dilution, and attenuants; that from obſtructions; aperients: that from inanition reſtoratives; that from relaxation; aſtringents.

Now delirium, dozing and convulſions; their cauſes being either obſtruction, ſtagnation or too violent motion; are to be relieved by bleeding in the foot applying cliſters to them and to the hallow of the leg, and ſometimes to the very head; opening the haemorrhoids, procuring the menſes or lochia cooling the too violent heat; or raiſing the too languid motion, with warm nervines ſuch as muſk, civet, ambergriſe; and by applying emollient and anodyne fomentation to the head and neck.

Watchings in fevers: their cauſes being the ſame as delirium dozing and convulſion; but ſlighter, the ſame method will likely avail; with this difference viz. that a more free uſe of paragoricks, and opiates may be allowed.

Heat in fevers; may be relieved by phlebotomy, vomits, coolers, diluents, attenuents aperients and demulcents.

Sweats in the beginings of fevers, ought always to be ſtopped, by all prudent means; unleſs the matter of the fever is exceeding morbific; but in the latter end ought always to be promoted, or allowed; unleſs they appear certainly to be ſymptomatick, and colliquative.

Looſneſs, or diarhæ in fevers; unleſs they be critical are to be cured by revulſion; vomits, purges, cliſters narcotics, ſheathers, and aſtringents.

Spots or puſtles in fevers (beſides the meaſles, and ſmall pox) require plentiful dilution, and keeping the viſcera in a juſt balance.

A. And they are diſtinguiſhed, by their pathognomonic ſigns: and cured, by their various indications, well attended to, and fulfilled.

31. Q. For inſtance, what are the pathognomonic ſigns of, and indications in an ephemeris?

A. The pathognomonic ſigns are the gentleneſs of the fever, the ſlightneſs of its cauſes, the goodneſs of the habit, in which it is, and the quickneſs of its criſis. And the indications are abſtinence, reſt, and diluting.

32. Q. What are the pathognomonic ſigns of, and indications in a Quinſy?

A. The pathog. are "pain, and inflamitory tumor "of ſome, or more parts of the fauces."

And the indications are to reſolve by bleeding, bliſtering, and cooling purges; to dilute with nitrous, acid, and ſaponaceous medicines; and fomentations, for the firſt ſtage; and for the ſecond emollient, ſuppurative cataplaſms, gargles, and ſuch like.

33. Q. What are the pathog. ſigns of, and ind. in a pleuriſy?

A. The pathog. are an "acute continual fever, a "hard pulſe, an inflamitory pain in the thorax, "much increaſed on inſpiration."

And the ind. are to endeavour a reſolution by bleeding, and cooling clyſters, by plentiful dilution with nitrous, acid, and ſaponaceous medicines, with fomentations, for the firſt ſtage. And in the ſecond diligently to obſerve the tendencies of nature; as whether the criſis is like to be by the hæmorrhoids, or urine with a ſtrangury, by bilious ſtools, or by metaptoſis, as parotids, or aſceſes of any kind: or, which

which is more common, by expectoration, and suit means to each of them.

34. Q. What are the pathog. signs of, and ind. in a peripneumony vere ?

A. The pathog. are a load at breſt, a ſhort difficult breathing, a cough, with heat of breath, and an acute continual fever.

And the ind. are to endeavour a reſolution &c. as in a pleuriſy.

35. Q. What are the pathog. ſigns of, and ind. in a peripneumony notha ? †

† This diſeaſe (as has been noticed by worthy authors) is very often till too late treated with neglect ; either taken for or confounded with ſuffocative catarrh, the humoral aſthma, a common cold or the quinſy, and ſometimes with the anginа maligna : it has many intermediate ſtates or degrees of inflamation with it, from very little or no fever at all to the ſtate of a peripneumony vere according as the ſtate of the ſolids, and fluids is different, in them that have it : it is often accompanied with a ſlight acrimony, and ſometimes though more ſeldom with the canker : it is known vulgarly in this land by the name of the rattles the blader in the throat cholar &c. it differs. (in this land) from the ſame diſeaſe as deſcribed by authors in other lands, chiefly in this that in America children are ſeized harder more frequently and are harder to cure than adults ; whereas with them it is the reverſe : it is diſtinguiſhable enough from all others by its pathognomonic ſigns, and by all the ſigns that a ſpontaneous glew doth attend. The cure hereof though difficult may be effected if taken in ſeaſon ; but when the ſpontaneous glew or phlegmy lentor by ſtagnation, and fever is changed to an almoſt irreſolvable maſs : which happens when this diſeaſe has been too long neglected, this vicid matter thus deprived of its moiſter and blown up into bubles in the lungs by the force of the air in reſpiration do frequently impoſe on the ignorant : for as they appear ſo much like : ſo they are frequently taken for real membranous bladders. The matter come to this paſs cannot but by accident admit of a cure that is if by chance the patient ſhould laugh them up ; but a thouſand to one if they do not choke him : but if this lentor remains in the blood unconcocted

A. The pathog. are a load at breaſt, ſhort difficult breathing, a cough, pain of the head increaſing on it, and a very gentle fever. And the ind. are to evacuate by bleeding moderately, by vomiting cautiouſly with Oxymel of Squills, antimonial wine; and by phlegmagougs with much prudence, and many, and large bliſters; and interſperſed mercurial purgatives, mercurial and antimonial alteratives, together with attenuating expectorants, as muſtard whay, Lac. Amoniac. Flor. Benzon. and ſuch like, adding *pro re nata* ſome lubricating oil.

367 Q. What are the pathog. ſigns of, and ind. in a catarrhal peripneumony?

A. The pathog. are a load at breaſt, ſhort difficult breathing, a caugh, and plentiful expectoration of a thin

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unconcocted the lungs once freed will ſoon fill again and again, till the patient is ſuffocated. Now if the quantity of phlegmy ſize in the blood is great as is often the caſe; and the humors very ſuddenly get but partly concocted; the glandular ſecretive veſſels of the lungs much widened, relaxed and very open; the ſpring or tone of the veſſels of the lungs almoſt loſt: theſe half attenuated humors, growing more moveable do ſuddenly fill the glands of the lungs; over diſtend them and ſo preſs upon the arteriola, and the origins of the pulmonary vein as to obſtruct the blood in its circulation through them and ſo ſuddenly ſuffocate the patient; while the blood is ponded up between the right ventricle of the heart, and the extremities of the pulmonary artery; as often happens in a peripneumony vere from an inflamitory ſpiſitude and tumor there. The cure heretofore aſigned under its pathog nomonic. ſigns will (if ſuitably proportioned to the age, and circumſtances of the ſeveral patients; regard being had to the peculiar ſtate of the ſolids and fluids and the conſequent degrees of inflamation in each particular caſe) prove ſucceſsful, when applied in ſeaſon, and carefully managed.

N. B. I have been more prolix on this ſubject: becauſe this diſeaſe is ſo very liable to be fatally overlooked, disregarded, or miſtaken for ſome other.

thin ſerous rheum. And the indications are lubricating demulcents, opiates and thickeners.

37. Q. What are the pathog. ſigns of, and ind. in an inflamatiou of the ſtomach ?

A. The pathog. are an acute continual fever, a terrible anguiſh about the vitals, a pungent burning pain in the ſtomach increaſed upon ſwallowing any thing into it, and violent vomiting.

And the ind. are like a pleuriſy, adding ſuch methods as are ſuited to the part, and the moſt emollient antephlogiſticks.

38. Q. What are the pathog. ſigns of, and ind. n a paraphrenitis ?

A. The pathog. are an acute continual fever, an intolerable inflamitory pain of the part ; much increaſed " upon breathing, coughing, ſneezing, preſſ- " ing the belly in going to ſtool, and ſtraining to " make water."

And the ind. are like other inflamitory fevers, but becauſe of the ſituation of the part emollient clyſters are the beſt fomentations.

39. Q. What are the pathog. ſigns of, and ind. in an hepatitis ?

A. The pathog. are an obtuſe pain in the right hyppochondra, continual ſlow fever, with anguiſh, and the yellow jaundice.

And the ind. are as in inflamitory fevers in general : adding in the ſecond ſtage ſaponaceous deterſive medicines, with anteputreſcents

40. Q. What are the pathog. ſigns of, and ind. in a cauſus ?

A. The pathog. are " continual burning heat, in- " extinguiſhable

" extinguiſhable thirſt, a dry yellow black and " burnt tongue, a little cough, a hollow voice, a " hard and quick pulſe, with dry ſkin, reſtleſſneſs, " and difficult breathing."

And the ind. are to evacuate by bleeding, and cooling clyſters, to relax the contracted fibres by fomentations to dilute with cooling, nitrous, acid, and ſaponaceous medicines, and to ſheath the acrimony with proper demulcents.

41. Q. What are the pathog. ſigns of, and ind. in a ſlow nervous fever ?

A. The pathog. are " ſlight chills, with uncertain " ſudden fluſhes of heat, and wearineſs all over the " body, lowneſs of ſpirits, a load, pain, or giddineſs " of the head, little thirſt, a weak quick unequal " pulſe, and oppreſſive breathing : with an increaſe " of the ſymptoms towards night, and about the " eighth day."

And the ind. are evacuations by gentle vomits, laxatives, and bliſters ; ſmall diluſion, gentle ſtimulants, and alexipharmix, as lapis contrayerva, caſtor, ſaffron, nnd ſalt of amber ; and a nouriſhing ſupporting diet of eaſy digeſtion, given often and in ſmall quantities, with a proper admixture of generous wine.

42. Q. What are the the pathog. ſigns of, and ind. in a putrid malignant fever ?

A. The pathog. are alternate heats, and chills, head-ach, giddineſs, vomiting, ' eyes full, heavy, " yellowiſh ; a bloated cadaverous aſpect, ſudden " loſs of ſtrength, trembling hands, and pale urine ;" all the ſymptoms greater from the beginning than the ſlow nervous fever. And the ind. are gentle evacuations

evacuations by vomits, laxatives, and clysters; cordials, and alexipharmix, as camphor, and saffron, Virginian and Seneka Snake Roots, contrayerva root; and to fortify the blood with acids, the bark, and astringents with alexipharmix.

43. Q. What are the pathog. signs of, and ind. in a hectic fever?

A. The pathog. signs are "an habitual fever, "with a small quick pulse; increasing after every "meal or motion; exhausting the fluids and wast-"ing the body by degrees." And the ind. are to corroborate the solids with proper exercises, as riding, and the like, and astringents *pro re nata*; and by giving a good consistence to the fluids with balsamics, and aglutinants, and food of the best nourishment.

44. Q. What are the pathog. signs of, and ind. in a pulmonary consumption?

A. The pathog. signs are (with or without uncertain shiverings) a hectic fever, a small, quick, soft, and floating pulse, drought, with an increase of heat, and flushing redness of the lips, and cheeks after meals: a load, obtuse pain, or anguish at breast with difficult breathing, night sweats, a dry, but sometimes tough phlegmy cough, and when the vomica is open an expectoration of pus, purulent foetid stringy matter, sinking in water, and when burned in the fire it smells of roast-meat. And the ind. are to maturate, break, cleanse, and heal the vomica; to fence the blood against the putrifaction, and to mitigate the intervening symptoms with much care. *

* Lamentable as it is, there are so few instances of pulmonary consumptions being cured, and little prospect as there is of better success in future. The difficulty of cure is not owing to the

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45. Q. What are the pathog. ſigns of, and ind. in an apoplexy?

A. The pathog. ſigns are "a ſudden loſs of all the "internal, and five external ſenſes, and voluntary motions: and there remains only the pulſation "of the arteries moſtly pretty ſtrong, and reſpiration difficult, great, with ſnoring, and the appearance "of a deep, and continual ſleep.

And the ind. are revulſive evacuations, joined with ſtimulants, and nervines.

46. Q. What are the pathog. ſigns of and ind. in an epilepſy?

A. The pathog. ſigns are "ſudden falling down "with the loſs of external, and internal ſenſes, with violent

want of the true knowledge of the diſeaſe its ſeat or any circumſtances about it; for there are few diſeaſes better underſtood; nor is it becauſe phyſicians cannot make true indications in it, for that alſo is as plain, and eaſy as in moſt diſeaſes; but it is of difficult cure and dangerous conſequence for ſuch like reaſons as theſe viz. the great importance of the lungs to life; the number and thinneſs of their veſſels; the neceſſity there is of their being in alternate motion; the neceſſity there is of maintaining their uſefulneſs prepare the chyle and refit the blood, for ſecretions, nutritions, or accretions, and from hence a very great difficulty, or impoſſibility of keeping the blood in a balſamic ſtate, where there office is much injured; and alſo their not being acceſſible by topical applications, or even of the lancet, when the vomica is mature However, by the uſe of ripeners, ſtimulating expectorants, detergents, balſamicks, vulnerarys, antiputreſcents nutratives gentle aſtringents, diaphoreticks and ſuitable exercises, duly applied, and varied according to the peculiar ſtate of the ſolids and fluids; the conſtitution, and circumſtances of each individual patient; mitigating the ſymptoms, pro re nata, with various coolers, lubricants cordials and opiates ſome have been cured which may encourage us to preſs forward in the uſe of theſe and ſuch like rational methods, as the only way to relieve in theſe almoſt deſperate caſes.

" violent concuſſions, and reciprocal involuntary
" mtions of ſome, or all the muſcles, with alternate
" reſt and new inſults of them."

And the ind. are evacuations, attenuents, ſtimulating revulſives, nervines, and anteſpaſmodicks; mercural and antimonial alteratives; but if attended with inanition reſtoratives, with proper alterative.

47. Q. What are the pathog. ſigns of, and ind. in a cholera morbus?

A. The pathog. ſigns are " choler diſcharged vio-
" lently by vomit and ſtool with pain inflamation,
" and convulſion, thriſt, quick pulſes, hea faintneſ,
" and coldneſs of the extremities.*

And the ind. are to waſh out the ſtomach, and bowels well, with the broth of ſydenham, or ſuch like

* This is a very violent diſeaſe. whatever be its cauſe either a furfeit of fruit, or acrimony agitated by the heat of the weather, or too much motion: ſo that the blood is diſolved and the glands of the ſtomach and bowels ſo ſhockingly ſtimulated that the thin humors, together with the bile are evacuated ſo copiouſly, that the patient is ſuddenly exhauſted; and the blood deprived of its moiſter remains thick, acrid and almoſt uncapable of circulation; hence paleneſs, coldneſs faintneſs convulſions and ſudden death. Now the broth of the ſydenham made by boiling a chicken in three gallons of water without ſalt, though a very weak is in this caſe a very efficacious medcine: for it waſheth the acrimony from the ſtomach, and bowels; ſheatheth and ſmotheth the freted nervous membranes and fibrila; diluteth the blood; and where there is an acidity of the humors nutroliſeth them; and allayeth the thriſt; ſo that if taken while the patient is plethorick, or not too much exhauſted, anſweareth well, even better than opiates, which if given at firſt to plethorick patients would not anſwer any good, nay might, even be very detrimental: becauſe of their rarefying power; but if the patient be very much exhauſted; this otherwiſe ſalutary medicine,

like, adding proper opiates; but to patients much exhauſted begin with opiates.

48 Q. What are the pathog. ſigns of, and ind. in a dyſentery?

A. The pathog. ſigns are (with or without a fever) gripes of the belly "and teneſmus, with ſlimy, "or bloody ſtools.

And the ind. are to bleed, and vomit, by way of revulſion; to abate the inflamation, if any there be, with nitrous medicines, and antiphlogiſticks, to purge the acrimony from the glands of the bowels, with rheubarb bolus with mercury, and ſuch like: and to change the ſharpneſs of the blood, with mercurial, or antimonial alteratives: metigating the ſymptoms with panegories: ſheathing the acrimony with demulcents; eſpecally by way of clyſters: adding aſtringents as the caſe ſhall require, and with due caution.

49. Q. What are the pathog. ſigns of, and ind. in the various ſorts of hydrocephali?

A. 1ſt. They are diſtinguiſhed according to their ſeat; thus if ſeated under the ſkin the tumor is uneven, ſoft and without pain.

A. 2d. If between the cranium, and pericranium the tumor is even, round, hard, and painful.

A. 3. If between duramater, and cranium the ſutures are open, and ridges on them.

A. 4. If between the dura and piamater the opened ſutures are without ridges. A.

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medi ine, may not be truſted to; but opium ſeems altogether neceſſary. Thus we ſee what a ſurpriſing difference there may be in the indication in the ſame diſeaſe, and ſame patient, only for a few hours wherein he has been neglected; as alſo how important and uſeful a ſeemingly trifling medicine may prove, when rightly applied.

A. 5. But if in the ventricles of the brain, the debility of ſight, and dilatation of the pupil of the eyes are the diognoſtic.

And the ind. are external diſcutients, ſpintous, and volatile epithems, and bliſters: together with internal hyd agogus, mixed with coroborating aromaticks; which if they do not ſucceed puncturing trapaning, and ſuch like muſt be entred upon; but the laſt ſort cannot be ſo cured, in this if internals do not cure, nothing can.

50. Q. What are the pathog. ſigns of, and ind. in a relaxation of the ſolids?

A. The pathog. ſigns are ſoftneſs of fleſh, languidneſs of the circulation, and cruddity of the humors. And the ind. are aſtringents from the moſt gentle, to the ſtrongeſt pro re nata; accompanied with proper exercíſes, and ſhort ſleeps.

51. Q. What are the pathog. ſigns of, and ind. in an over tenſion of the ſolids?

A. The pathog. ſigns are hardneſs of the fleſh, dryneſs of the ſkin, velocity of the circulation, and great heat. And the ind. are emollients, avoiding of exerciſe, keeping in a moiſt air, and taking long ſleeps.

52. Q. What are the pathog. ſigns of, and ind. in a too much abounding acid?

A. The pathog. ſigns are four belchings, hunger, pain in the ſtomach, colicks, wind, and convulſions, ſlugiſhneſs of the bile, and four green ſtools: in the blood, paleneſs, itchings, pimples, obſtructions, coagulations, ulcers, prickings of the brain and nerves. And the ind. are all antacid, from thoſe ſlightly prepared

pared from animals to the fixed and volatile alkaline ſalts, ſtimulating aromatic aſtringents; and increaſing the circulation, by longer and ſtronger exerciſes.

53. Q. What are the pathog. ſigns of, and ind. in a prevailing alkali?

A. The pathog. ſigns are thirſt, ſtinking belches, foulneſs of throat, tongue, and palate, vomiting of corrupt bileous matters, or a looſneſs, with much choler, inflamitory nervous colic pains: in the blood burning fevers, with fetid urine, and cadaverous ſcents.

And the ind. are all acids, whether vegetable, fermented, or mineral, all acid or nitral ſalts, with ſaponaceous deterſive medicines, diluents, vomitory's, and catharticks.

54 Q. What are the pathog. ſigns of, and ind. in a ſpontaneous glew?

A. The pathog. are ſickneſs at ſtomach, its fullneſs and vomiting, want of digeſtion, ſlugiſhneſs, ſlimineſs and want of choler, an increaſe of phlegm, which binds and ſwells the belly: in the blood lentor, paleneſs, and obſtructions, pale urine, white ſwelling, and ſlow ſpittle. And the ind. are diluting, attenuating, ſtimulating, ſaponaceous, evacuating medicines: accompanied with frictions, exerciſes and aſtringents.

55. Q. What are the pathog. ſigns of, and ind. in obſtruction?

A. The pathog. are tumor, pain, heat, and debility of the functions depending from thence; an increaſe of the fluids, in general, or particular, according to its ſeat. And the ind. are aperients, relaxers,

laxers, emollients, diluents; or even aſtringents, according to the peculiar nature of the obſtructing cauſe, and the ſeat, circumſtances, and long duration of the obſtruction.

56 Q. What are the pathog. ſigns of, and ind. in a plethora?

A. The pathog. are fulneſs of the veſſels, languidneſs of the circulation, or febrile ephemeris. And the ind. are bleeding, a ſparer diet, and increaſing the perſpiration by longer, and ſmarter exerciſes.

57. Q. What are the pathog. ſigns of, and ind. in a lentor of the blood?

A. The pathog. ſigns are coldneſs, ſhaking, ſucceeding fever by obſtructed capillaries. And the ind. are all diluents, and attenuants.

58. Q. What are the pathog. ſigns of, and ind. in an acrimonious ſtate of the fluids?

A. The pathog. are diſſolutions of the blood, and colliguations, by ſweat, urine or ſaliva, and all hemorrhages by erotion. And the ind. are obtundants, ſheathers, and vulneraries, diluting and expelling the ſame.

59. Q. What are the pathog. ſigns of, and ind. in rareſcence of the blood?

A. The pathog. are ſudden fulneſs, increaſed circulation, and febrile heat. And the ind. are gently to dilute, ſheath, correct, and expel the rarifying cauſe.* 60. Q.

* The foregoing pathognomonick, and indicating inſtances, may prove ſufficient; for illuſtration; eſpecialy conſidering we have many worthy authors who have largely, and particularly treated, on theſe and all other known diſeaſes; in all their forms, and variety of their interchanging ſymptoms to go on longer in this ſcheme would be perhaps rather tedious than inſtructive.

60. Q. What are medicines?

A. "All vegetable, animal, and mineral bodies, "that are so naturally, or are made so by art, as "that they are able to produce a change, in the ani- "mal œconomy; and yet conquerable by the vis "vita, and all the rest are poisons."

61. Q. How are medicines divided?

A. Into these eight following classes, viz. evacuants, attenuants, aperients, obtundants, emollients, corroboratives, sedatives, and restoratives. †

62. Q.

† I know no better method to class medicines than according to the various intentions of cure for which they are needed. These eight divisions and their subdivisions therefore may comprehend them all; but these divisions, and their subdivisions reciprocally interfere with one another: for as evacuants are subdivided into emeticks, cathartick eccoproticks diureticks, diaphoreticks sudorificks viscatory, and emenagougs; to which we may emphatically add phlebotomy: yet these are attenuants as well as evacuants, and all evacuants are attenuants more or less, and the reverse; and all attenuants are aperiants, and the reverse, which interferes with a third class. Now if we go on with these subdivisions through all the classes according to our medicinal intentions, till the last and divide restoratives into nutratives astringents, and nervines; we shall find that even our nervines must interfere with the other classes: for sometimes our nervines must be attenuants sometimes emollients sometimes obtundants, sometimes sudorificks viscatories, cathartick's, or emeticks; and but sometimes nutratives or astringents according to the peculiar circumstances of our patient, so affected or our nervines will be ineffectual: and 'tis very much so of all the rest. So that when we consider the materia medica we see, that the dividing simples into classes, can never be done with propriety any otherwise than as there are but so many medicinal intentions, in the whole to be provided for; and these must be sometimes just the reverse of what they must be at other times as we have already seen. The surest and best way therefore to attain the true knowledge of the operations of medi-

cines,

62. Q. Which are the moſt important medicines in the materia medica?

A. The various preparations of mercury, chalybs, antimony, cortex, and opium.

63 Q. What are the moſt obvious medicinal properties of the various preparations of mercury?

A. That they are the moſt powerful deobſtruents, and attenuents, that can be uſed with ſafety.

64. Q. What are the moſt obvious medicinal properties of the various preparations of the chalybs?

A. That they are aſtringent, attenuating, emmenagogue, and rarefying.

65. Q. What are the moſt obvious medicinal properties of the various preparations of antimony?

A. That they are emetick, cathartick, aperient, and rarefying.

66. Q. What are the moſt obvious medicinal properties of the cortex?

A. That it is the moſt powerful aſtringent febrifuge; but never attenuating, or emmenagogick, only where relaxation, and want of tone in the veſſels is the chief cauſe of the vicidity, lentor or menſtrual obſtructions.

67. Q. What are the moſt obvious medicinal properties of opium?

A. That it is powerfully attenuating, rarefying, relaxing, ſudorifick; and the moſt powerful ſoponifick, ſtupefactive, and narcotick, than can well be uſed with ſafety, and which indeed ought always to be uſed with much caution. E A DIS-

cines, is by gaining a diſtinct knowledge of their mechanical powers, and comparing them with the nature ſtate, and powers of the animal œconomy; which advantageous method, Dr. Boerhaave has carried to a great height in his book entitled the powers of medicine.

A DISCOURSE,

On the Nature and Operation of MERCURY, as a MEDICINE.

DESCRIBING,

1ſt. Its component parts.
2d. Method of its operation, &c.
3d. Anſwer to Queries.
4th. Uſeful conſequences.

PART FIRST.

MERCURY is compoſed of exceeding denſe, yet looſely connected, and extremely diviſible globules; that is, each globule is compoſed of a number of leſſer globules, and theſe again of a number ſtill ſmaller; by which mechaniſm it may be divided and ſubdivided, and ſo on almoſt *ad infinitum*, till it is ſpecifically lighter than the air, (tho' in its natural ſtate it is fourteen times heavier than water,) in conſequence whereof it is ſemi-fluid and non-pelluced; for the globules being ſo very denſe, yet looſely connected ſo far impreſs or flatten one another as to deſtroy part of its fluidity and all its pellu-

pellucidity. * The truth of which may be sufficiently proved by many experiments in philosophy and chimistry.

PART SECOND.

Wherefore any one acquainted with our animal æconomy may easily see that mercury performs its medicinal office by its weight and consequent agility. Which that we may the better understand, let us follow it round in the circulation; let us take mercurious

* 'Tis said by a great author that mercury is a kind of water; but fourteen times heavier than the common: with which it hath some similarity in point of fluidity; but if we take a philosophick view of the component parts of water we may then see in what particulars they agree or differ. Water then is composed of small, smooth round incompressibly hard, and absolutely indivisible globules, and each globule is of equal magnitude and density, which last property in chief gives it its pellucidity, as the other five give its fluidity. For if the globules were some greater, some less, they could not lie so directly over one another, as to maintain their rectilinial vacuities, which if not maintained the rays of light could not penetrate so regularly as to render it Pellucid. Wherefore mercury differs from water in these five particulars viz. in weight, compressibleness, pellucidity magnitude, and divisibility of its globules; but agreeeth with it only partialy in that one of the fluidity. Now should any one object that mercury cannot be considered as a semi fluid because it has as great a propensity to run as water which is by our definition a perfect fluid let such objecter consider that were it not for the loose connection of the mercurial globules, wherely they somewhat compress or flatten one another mercury would be the most fluid of all bodies because the heaviest of all fluids. And also when the globules of any fluids are compressible by their own weight, yet retain so much of their globular figure as to render them fluid, in some sort, they may with as much propriety be termed semifluids, as those that are partly weged up with angular & heterogenous particles.

rious dulcis then, for some preparation is necessary for its entrance into blood; because 'tis very slow and difficultly that it entereth the blood, while in its crude state and uncominuted; the density and fluidity thereof so increasing the peristallick motion of the bowels, that it hurryeth by the mouths of the lacteal and absorbing vessels before it can be sufficently cominuted to enter them. As the globules in mercurius dulcis are divided by the salts and by levigations, or if we triturate mercury with the gums till the globules are sufficiently cominuted; either preparation * being received into the stomach, mixed with

* Preparations of mercury differ more as to their operation in the prima via than in the blood; for though the preparation be made with salts oils or gums when they are introduced into the blood, they are soon robbed to a great degree by their mixture with the aqueous and serious parts of the blood; and at length almost or intirely are freed from them, so that if we should consider its operation in the blood there would be comparitively but very little differance or matter which preparation we use; but in the prima-via the difference would be very great: for corosive sublimate being charged with the spicula of the acid salts makes a very wounding stimulous, on the inner coats of the stomack bowels, and chyliferous ducts. occasioning a mortification with convulsions, and death; while the very same preparation desolved in a sufficient quantity of brandy or gineva may be taken into the body and introduced into the blood with safety, ; because the acid salts are disolved, and neutro lised by the spirits. And the very same preparation resublimed with fresh mercury, levigated washed &c. is by these means, so robbed of the saline spicula and the remainder so blunted, that although it may stimulate so as to prove emetick in a considerable dose yet is so mild as to occasion no delterious effects in the prima-via. While preparations of mercury made by triturition with the gums are far more mild, yet these are some milder than others; but the operation in the general course of the circulation is nearly the same in all. The most remarkable differance

with the humors, &c. is by the action of the ſtomach and bowels carried along the inteſtinal tube, where it is moſtly taken up by the lacteal, obſorbing veſſels, and carried along the chyliferous ducts into the general courſe of the circulation, &c. ſo that mercury pervadeth all the arterial and veinal circulation; but not equally; for being near thirteen times heavier than the blood, by the laws of circulation, will keep the middle of the artery, forcing the blood and humors (which are ſo much lighter) to the out ſides of the veſſels, and will frequent thoſe arteries moſt where the velocity is greateſt, and the courſe the ſtraiteſt. By which mechaniſm, when by the contraction of the left ventricle of the heart, the mercury and blood are ſent into the great artery; the mercury paſſeth by the coronary arteries keeping the middle courſe, but not being eaſily turned aſide collideth againſt the inward coa thereof as it turneth down. And becauſe the ſubclavian and carotid arteries ariſe from the upper ſide of this crook, more of the mercury will be forced into them, than in all the reſt

ance is that ſome of the gums have as it were a greater affinity with mercury than others as probably ſome of the ſalts have too. Now the gums too have a greater tendency ſome to one part of the body, ſome to another by a kind of hygrolick law hitherto inexplicable Hence mercury triturated with the gum arabic doth not ſo ſoon or eaſily ſalivate as with others. Now gum arabiac having a greater affinity with mercury will ſtay longer with it in the circulation than others (though much more viſcid than it) and being of a ſheathing, ſmothing and diueretick nature naturally inviteth the mercury to be ſecerned by the reinal glands; hence is more efficatious in the lues venera, ſtone in the kidnies, &c. than other preparations. Query is not this equal to if not the very ſame mighty ſecret ſome have braged of that they could cure the moſt obſtinate lues without a ſalivation?

reſt of the arteries of the body: hence the moſt ſenſible effects of its operation in the glands of the fauces. For, in order to conceive of a compleat ſalivation, 'tis not neceſſary to believe, that the mercury *per ſe* does really pervade the glands of the fauces, which ſeem by their ſtructure naturally to exclude it; being inſerted laterally, that thereby they may draw off the more viſcid, which is the lighter parts of the blood; mercury being much heavier than the moſt denſe parts of the blood which are excluded by the lateral ſtructer of the glands it ſhould ſeem that mercury muſt be excluded too. Moreover 'tis eaſy to ſhew, and demonſtrate how a ſalivation may be cauſed without it, for a globule of mercury may be two times leſs, yet ſix times heavier than a globule of blood, by which weight the momentum it receives from the heart and arteries is ſix times greater than that of the blood globule, and conſequently aproportionable degree of velocity, &c. Hence it overtaketh it as a bullet does the feathered kind, and though flying from it tareth it to pieces; and if it ſtrikes it on one ſide takes off a piece, turning it aſide cauſing a whirling motion. Beſides ſo much more motion being occaſioned by the additional denſity in the circulation, the blood is hereby greatly agitated, whence a large ſtore of thoſe particles that are fit to be ſecerned by the glands of the fauces, are drove by the denſity of the mercurial globules into theſe glands, whence a compleat ptyalifm, &c. *yet no mercury diſcharged by the glands.* Furthermore, what we have ſaid of the glands of the fauces, may with as much reaſon be ſaid of all the other glands fitted for a viſcid

ſecretion,

ſecretion, and with ſome reaſon be applied to all the glands of the body, their ſtructure being deſigned by nature to ſeperate the lighter parts of the blood; wherefore 'tis a fact, that while mercury remains in the circulation *heavier* than the moſt denſe parts of the blood, it cannot enter any of the glands, for reaſons already given, and for which many more might be adduced. &c.

QUERY FIRST.

If mercury performs its medicinal office by its weight and conſequent agility, and being much heavier than the moſt denſe parts of the blood, is excluded from the glands by their lateral ſtructure, keeping the middle courſe: why does it not ever keep on from the ſmall arteriola to the origin of the veins; thence to the vena-cava and heart, and ſo round in the circulation, cauſing while life remains, a continual diſſolution of the blood, a wearing of the ſollids, and the ſure deſtruction of the animal? which is contrary to fact, becauſe mercury is evacuated through the inteſtinal glands by the help of catharticks, and the cutaneous by diaphoreticks as experience abundantly evidenceth.

ANSWER.

True indeed this alwavs will be the caſe, that ſo long as mercury remains in the circulation heavier than the moſt denſe parts of the blood, it never will enter nor be evacuated by any of the glands; but being cominuted

cominuted by the actions of the heart and arteries, it may become ſpecifically lighter than the rareſt parts of the blood, and ſo by the laws of circulation naturally be evacuated by many of the glands; but without this cominution there is no conceivable way to evacuate mercury from the blood, with the leaſt degree of ſafety to the animal. But that we may more clearly underſtand this matter, let us conſider what it is that cominutes mercury, viz. heat attrition, and intervening bodies, ſuch as ſalts, oils, or the gums: like to moſt of which may be found in the animal circulation; for what are the actions of the heart and arteries, but attritions? And what are the intervening blood and ſerum, but viſcid bodies like gums? And what are the ſalts of the blood, that they may not ſerve to keep the cominuted mercurial globules apart? And are there not oils there? Wherefore all the neceſſaries to cominute mercury are preſent in the animal, when the circulation is lively; for the ſtronger and ſwifter the circulation is, the greater the attrition, the conſequent heat, all the cominutive powers, and the reverſe. Hence it comes to paſs, that if the *viſ-vita* is not ſufficient without a *ſtimulus* to raiſe attrition enough to cominute the mercury, the addition of ſtimulating, cathartick, alexipharmick, or diaphoretick medicines are neceſſary, and ſometimes need often repeating, and the phyſician has enough to do to clear it from the blood, even in a long time after; there not being *viſ vita* ſufficient to cominute it for its diſcharge, though aſſiſted by all proper ſtimulants. The ſalts of the blood being greatly decayed in ſuch languid circulations. Hence

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'tis eaſy to ſee how catharticks take the mercury out of the blood, by the inteſtinal glands; for they comminute the mercury by the ſalts they fling into the blood, but chiefly by increaſing the circulation, attrition, and heat, by their ſtimulating and acrid parts, which they do moſt in the glands of the bowels, and by that means draw them there, and being ſufficiently cominuted, they paſs off with the other humors, &c.

QUERY SECOND.

If mercury may be thus cominuted in the blood by the very actions of the veſſels, and if it performs its operation chiefly in the glands of the fauces, taking up the ſubclavian and caroted arteries, as in fact it muſt, when ever it cauſeth a ſalivation, &c. what defendeth the tender ſtructure of the brain from its virulence, which would bring ſure and ſudden diſtruction to the animal, at once deſtroying the baſis and foundation thereof?

ANSWER FIRST.

The ſtructure of the parts not ſimply that it is glandular, but alſo becauſe upon the entrance of the caroted and paroted arteries, into the cranium; they lay aſide their muſcular coat, and form frequent inoſculations and expanſions with one another, both which ſerve greatly to retard the motion of the blood: in the firſt, becauſe thereby they loſe much of their oſcilitating powers; and in the ſecond, the force of

the heart; wherefore there is leſs attrition there, and conſequently leſs heat, and leſs cominution of the mercury there. Beſides the cortical, and more ſo the medulary parts of the brain ſecern from the blood ſo much the fineſt, and conſequently the lighteſt parts of the blood, that the mercury, in order to enter here, by the laws of circulation, muſt be more cominuted than any where elſe; but for reaſons already given, in fact it is leſs.

ANSWER SECOND.

Beſides the more the mercury is cominuted by the actions of the veſſels in general, the leſs it will circulate upwards, or towards the brain, for by its cominution growing lighter, it will, by the laws of hygroſtaticks, circulate nearer to the outſides of the veſſels, and ſo more enter the glands before it reaches the veſſels of the cranium: That is, leſs will enter the carotid and parotid arteries, and more enter the lower veſſels of the body; wherefore the cominution of the mercury leſſens the ſalivation, and prepareth it for its diſcharge from the blood. * From all

* As mercury pervades the glands moſt when it is moſt cominuted, being readily drove through them and evacuated; but not at all when the ſalivation is higheſt: ſo when we give mercury to remove obſtinate glandular obſtructions: the beſt method is to exhibit often, and often take it off, and that as much as poſſible through thoſe very glands that are obſtructed that is chiefly by cathart clyſters if the glands in the primæ viæ are in fort; but by alexipharmicks and diaphoreticks if the obſtructions are in the cutaneous glands. The reaſons are obvious: for if the obſtructions to be removed be in the cutaneous glands, and we ſhould neglect the common

all which it plainly appeareth, that although mercury may be by the actions of the veſſels, in the circulation, ſo cominuted as to be evacuated by the glands in general, yet the tender veſſels of the brain are by their ſituation and ſtructure naturally defended from its virulence.

CONSEQUENCE FIRST.

From what has been ſaid, it is eaſy to ſee what would be the event of giving mercury in acute fevers; for by its weight and agility it would ſuddenly and violently augment the circulation, already too intenſe, and conſequently greatly increaſe the heat, already too great, and endanger from that very cauſe the coagulation of the ſerum of the blood, and the ſudden driving all the moiſture out of the blood, and of ſo rarefying the blood as to *burſt* through the veſſels; for the mercury in this caſe would be ſuddenly and wonderfully cominuted, † ſo as ſuddenly and violently to

common method of uſing the decoction of the woods, and a diaphoretic courſe, and think to remove them by one long and ridged ſalivation and at laſt take it off by the glands of the bowels only, by catharticks; little or no benefit could be obtained by the long ptyolism only juſt waſhing theſe glands out by the over attenuation of the humors: whereas if the above mentioned method be attended to, we may many times have the advantage of driving the mercury it ſelf often through the very glands that are obſtructed, and ſo clear them out very effectually, and with leſs harm to the conſtitution than a long ſalivation. With how much confidence may we practice while we ſee the reaſons of it very clearly?

† The reaſon is great heat and agitation, which always accompanieth very acute fevers will very ſoon cominute mercury and being cominuted, the hygraulick laws will bring it to the glands,

to pervade the glands, if permiable, if not, would violently impact the thickned and almoſt dried up humors into them; bringing, inſtead of a criſis, a great and ſudden diſſolution and putrafaction of the humours; a wearing of the ſolids, * and a ſudden diſcharge of the mercury out of the body.

Conſequence

glands, and the violence of the circulation, ſo mightily increaſed by the denſity of the mercury make it ſtrike hard. For the mercury though ever ſo much cominuted is yet as much heavier than the other humors as it was in its crude ſtate, in proportion to the bigneſs of its globules that is to ſay a mercurial globule which in its crude ſtate is near thirteen times heavier than a globule of blood of the ſame bigneſs, divide each of theſe ſix times, and ſtill the mercurial globule will be near thirteen times heavier than the blood globules thus divided: the reaſon therefore that the mercurial globules can become ſpecifically lighter than the rareſt parts of the blood, is becauſe they may really become ſo much more cominuted than the blood and humors as to render them ſo: for all denſe bodies become ſpecifically lighter in proportion as they are divided and the reverſe. But were it not for this wonderfully diviſible property in mercury whereby it can be ſecerned by the glands, mercury once introduced into the blood, muſt of neceſſity prove a ſlow but certain poiſon; always wearing, heating diſſolving, ruining the animal œconomy, till death. See the diſcourſe on the componant parts of mercury at page 34th and 35th. See alſo the firſt query and anſwer to the ſame at page 39th and 40th.

* Notwithſtanding in ſlow fevers mercury would have a much more mild and ſalutary operation that is, mercury would have a more or leſs violent operation as the fever is more or leſs intenſe: as a bullet will go quicker and ſmarter in proportion to the ſtrength and violence of the exploſion by which it is protruded from the gun and the reverſe. Beſides the greatneſs of the heat in very acute fevers has a great cominutive power on the mercury; but a hardning and inſpiſſiating power on the ſerous parts of the blood, yet it is the ſtrength and violence of the circulation that driveth the highly cominuted mercury ſo ſuddenly and violently in to the glands and the more ſo, as the heat is more intenſe, and the reverſe. Notwithſtanding in low fevers under certain circumſtances

CONSEQUENCE SECOND.

Nor will it be difficult to know, what would be the conſequence of giving mercury at the end of the ſhock of a fever, before the ſolids and fluids are, in any conſiderable meaſure, reſtored: for beſides their veſſels being too much worn to bear more wearing, and their fluids too much exhauſted and attenuated; 'tis a wonder if the mercury can be cominuted, ſo as to be diſcharged out of the blood till it brings on ſome fatal effect. For 'tis manifeſt from what has been ſaid, that it cannot be cominuted without conſiderable action of the veſſels and the conſequent heat, and that it cannot, without this comminution, be evacuated from the body by human art; which ſuch languid and thin veſſels, and ſuch impoveriſhed blood are very unable to perform. Hence 'tis manifeſt that the mercury in this caſe, if no fatal effect ſhould follow, would with the utmoſt difficulty, or never, be got out of the blood.

CONSEQUENCE THIRD.

Like to this laſt very much is the caſe of thoſe, who from natural make have ſlender veſſels, and conſequently thin and ſoft fluids.

Conſequence

ces mercury may be given with ſafety, and to great advantage, but with due caution, and having a watchful eye over the fever that it be not too intenſe nor likely ſoon to become ſo: but more eſpecially benefit may be had from mercury in thoſe low fevers whoſe cauſe is a viſcidity or viſcoſity, accompanied with acrimony, that occupieth the glands, ſuch as peripneumony notha, angine maligna, and the like.

CONSEQUENCE FOURTH.

Hence alſo we may learn the danger of giving mercury to hectical patients, whoſe ſolids are already too thin and elaſtick, and their blood too looſe, fluxile and open.

THE CONCLUSION.

Hence likewiſe any one aquainted with our animal œconomy, may plainly ſee, that what has been ſaid on this ſubject is no chimera, nor fruit of a wild imagination, but actually the truth, and what may be depended on, and that the various effects of the mercury, as to good and bad ones, is owing to the different ſtate of the ſolids and fluids in them that take it. That there is no uncertainty as to its operation, where the circumſtances of our patients are well known, that thoſe of robuſt veſſels may take mercury with ſafety, though their fluids are vitiated, that there is danger where the veſſels are thin, though the fluids are conſiderable rich; that mercury is in fact, the moſt powerful deobſtruent and attenuent that can be uſed with ſafety, and in this view the moſt noble medicine, if prudently and ſkilfully adminiſtred. Hence alſo anſwers may readily be given to the following very important queſtions: as why 'tis ſo much more difficult to free ſome patients blood from mercury, than others? Why in ſome 'tis beſt done with cathartick's? Others with alexipharmicks? why ſome muſt have always tried, and are freed with the utmoſt difficulty? Why others need no method

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at all? Why ſome are ſoon hurt by the operation of it? Others bare it not at all? And yet others bare it, unhurt through a long courſe? With many more queries of the like nature.

Practical Rules and Observations.

1. OPIATES are dangerous where the nerves are weak, or a plethora does exiſt.

2. Opiates are aperient in all caſes where there is not too much blood, or too great a relaxation; but many times ſtop all natural evacuations, if given in a plethora, or relaxation.

3. Aſtringents become attenuents only by giving a proper tone to the over relaxed veſſels, and thereby increaſing their oſcillatations, or vibratory motions; which if done by hot ſtimulating attenuents would, it may be, too much exhauſt the patient, by too copious a perſpiration.

4. 'Tis diſadvantageous to give aſtringents plentifully, ſoon after great evacuations; becauſe the veſſels now contracted down beyond their proper tone, and braced in that ſtate, will, it may be, never again gain their proper magnitude.

5. Aſtringents anſwer better to mend a relaxation of the ſolids, than a broken craſis of the blood; but where both happen together, they are more eſpecially beneficial.

6. The cortex ſhould never be given, where obſtructions, and a viſcid blood exiſt, except in caſes of great relaxation.

7. Curicuma boiled in vinegar ſtops all hæmorrhages,

ges, that are occaſioned by rarefaction ſimply; but it muſt be ſtipticks indeed, to ſtop them that ariſe from relaxation, and acrimony, or ſolutions of continuity.

8. All very intenſely hot fevers ought always to be ſoon abated either by evacuations, cooling medicines, or both, as the caſe demands; but very low fevers, often ſtand in abſolute need of hot ſtimulating cordials, and alexipharmicks.

9. All fevers that ariſe ſimply from a too quick circulatory motion, ſuch as an ephemeris, by too much labor, or a worm fever, become dangerous only by their exceſs of heat, which having no obſtructions to hinder the circulation in any part; have therefore a heat univerſally diffuſed, till by their exceſs of heat a lentor, and obſtructions take place.

10. In the beginning of all diſſolvant fevers there are great ſigns of a plethora; but as they ariſe chiefly from acrimony, and the conſequent rarefaction, ſmall bleedings only may be admitted with any kind of ſafety; and yet theſe ſmall bleedings may be of as great neceſſity as large ones are in a true plethora.

11. All eriſiplateous fevers want more coolers than ſtimulating, or warm cordials; the acrimony flung out on the ſurface of the body being an evidence, that the viſvita is at preſent ſufficiently ſtrong.

12. All fevers ariſing from contagion excite a ſet of ſymptoms, exactly agreable to the ſtate of the ſolids, and fluids, and alter no faſter than it can alter the ſtate of the blood; hence the great variety of fevers, in appearance the ſame at the begining are mimicked by the ſmall pox, and other contagious, and eruptive fevers, at their beginings.

13.

13. All nervous diſorders, that are fundamental, ought always to be taken ſpecial care of; becauſe the nerves are the foundation of the animal; but heſterical diſorders, though truly nervous, having a ſeat diſtinct from the head of the nerves, are of leſs conſequence, and prove a very moveable ſtate of the nerves, in the heſterical patient.

14. Worms kill moſtly in one of theſe three ways viz. either firſt by exciting ſo much heat, by ſtimulating the nervous parts, as to coagulate the ſerum of the blood; ſecondly by wounding, piercing, and boreing the ſtomach, and bowels, and inducing a mortification, or thirdly by religating, or knotting, and ſo ſtopping ſome important paſſages.

THE END.

ERRATA.

Page 9, line 23, immediately after the record; add (as the ſtomach and bowels,) p. 11. l. 2 . dele from the (; to ;) p. 12 l. 22, add (that) to the beginning of the anſwer; p. 13, l. ult in the margin, inſtead of inventia r. (juventia) p. 14 l. 9, in ſtead of attended r. (attempted,) ibid l. 9, marg. inſtead of deſolation r. (diſſolution,) ibid l. 15, inſtead of cardiner r. (cardiac); p. 17, l. 11, for left r. (left); p. 19, l. 33 marg. for colligna tive r. (colliquative); p. 21, l. 2 from the bottom, for laugh read (cough); p. 22, l. 4, for get read (yet); p. 26, l. 9 marg. after uſefulneſs add (to) p. 27, l. 11, for inflamation r. (inflation) p. 29, l. 15, for panegories r. (paregoricks) p. 29, l. 4, for ſpintous (ſpiritous) ibid. l. ult. to antacid add (s); p. 30 l. 13. for ni- (nutral); p. 31, l. 19 for colliguations r. (colliquations.)